CLAIMS

What is claimed is:

1. A method of characterizing an acoustic environment (100), comprising: providing first audio signals to a plurality of loudspeakers (110) within the acoustic environment (100), detecting second audio signals from a plurality of detectors (150) that are located at known locations relative to a user location, determining a set of compensation factors (170) based on differences between the first audio signals and the second audio signals, and storing the set of compensation factors (170).

2. The method of claim 1, wherein the plurality of detectors (150) are attached to a fixture that is located at the user location.

3. The method of claim 2, wherein the known locations of the plurality of detectors (150) correspond to locations of speakers (250) on a headphone device.

4. The method of claim 3, further including providing the set of compensation factors (170) to a purchaser of the headphone device.

5. The method of claim 2, wherein the fixture is a head-mounted fixture that is worn by a user at the user location.

6. The method of claim 5, further including providing the set of compensation factors (170) to the user, via a commercial transaction.

7. The method of claim 1, wherein the set of compensation factors (170) include at least one of: a set of amplitude factors, a set of phase factors, and a set of reverberation factors.

8. The method of claim 1, wherein the set of compensation factors (170) include independent sound effects.

9. A characterization system (200), comprising: a rendering device (120) that is configured to provide first audio signals to a plurality of loudspeakers (110), a detector device that is configured to receive second audio signals from a plurality of detectors (150), and a comparator (160) that is configured to provide compensation factors (170) based on differences between the first audio signals and the second audio signals; wherein the plurality of detectors (150) are located on the detector device at locations corresponding to speakers (250) on a headphone device, and the compensation factors (170) facilitate a recreation of the second audio signals from the first audio signals via the speakers (250) on the headphone device.

10. The characterization system (200) of claim 9, wherein the detector device includes a head-mounted fixture.

11. The characterization system (200) of claim 9, further including a storage device that is configured to store the compensation factors (170).

12. The characterization system (200) of claim 11, wherein the storage device is configured to store the compensation factors (170) as one of a plurality of sets of compensation factors (170) associated with a user.

13. The characterization system (200) of claim 9, wherein the compensation factors (170) include at least one of: a set of amplitude factors, a set of phase factors, and a set of reverberation factors.

14. The characterization system (200) of claim 9, wherein the rendering device (120) is configured to provide the first audio signals to effect a three-directional audio ambiance.

15. The characterization system (200) of claim 9, wherein the rendering device is configured to provide the first audio signals to the plurality of loudspeakers (110) via a processor (120) that converts the first audio signals into signals that effect a three-dimensional audio ambiance.

16. A rendering system (300), comprising: a source (120) of a plurality of first audio signals, and a headphone driver (260) that is configured to apply a set of compensation factors (170) to the plurality of first audio signals and to provide therefrom a plurality of second audio signals for driving speakers (250) in a headphone; wherein the compensation factors (170) are derived from a comparison of signals from a plurality of loudspeakers (110) and signals received at a plurality of detectors (150) arranged in a configuration corresponding to the speakers (250) in the headphone.

17. The rendering system (300) of claim 16, wherein the source of the plurality of first audio signals includes a processor (120) that is configured to effect a three-dimensional acoustic ambiance via the first audio signals.

18. The rendering system (300) of claim 16, wherein the compensation factors (170) include at least one of: a set of amplitude factors, a set of phase factors, and a set of reverberation factors.

19. The rendering system (300) of claim 16, wherein the compensation factors (170) include independent sound effects.

20.   The rendering system (300) of claim 19, wherein the independent sound effects are subtractive, so as to provide a sound-cancellation effect.